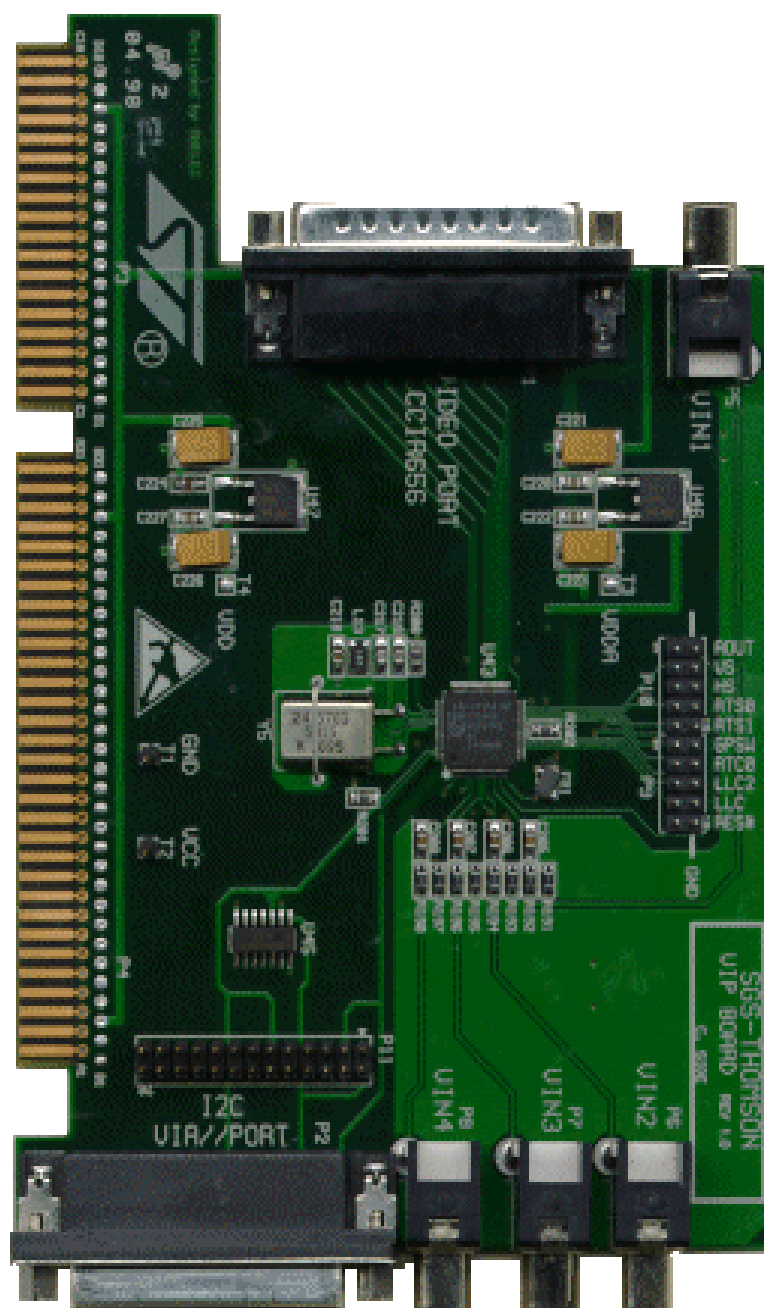


VIP1.0



STMicroelectronics

VIP1.0

Demonstration Board Documentation

Revision 0.1

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This document is preliminary and is
subject to change without notice

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1. Introduction

The VIP board has been designed to test the video input port of the STPC products. It allows to transform an analog video signal in YUV digital data. It's controlled by I²C bus

1.1 VIP Board Specifications

Input channels:

- 4 analog inputs (CVBS format)

Output channel:

- One digital YUV output in CCIR 565 format 8 bits.

I²C bus:

- We can control the VIP board with a I²C bus via a parallel port.

Supply:

The VIP board can be supplied by ISA bus or by an external power supply. This board works in 0V/5V.

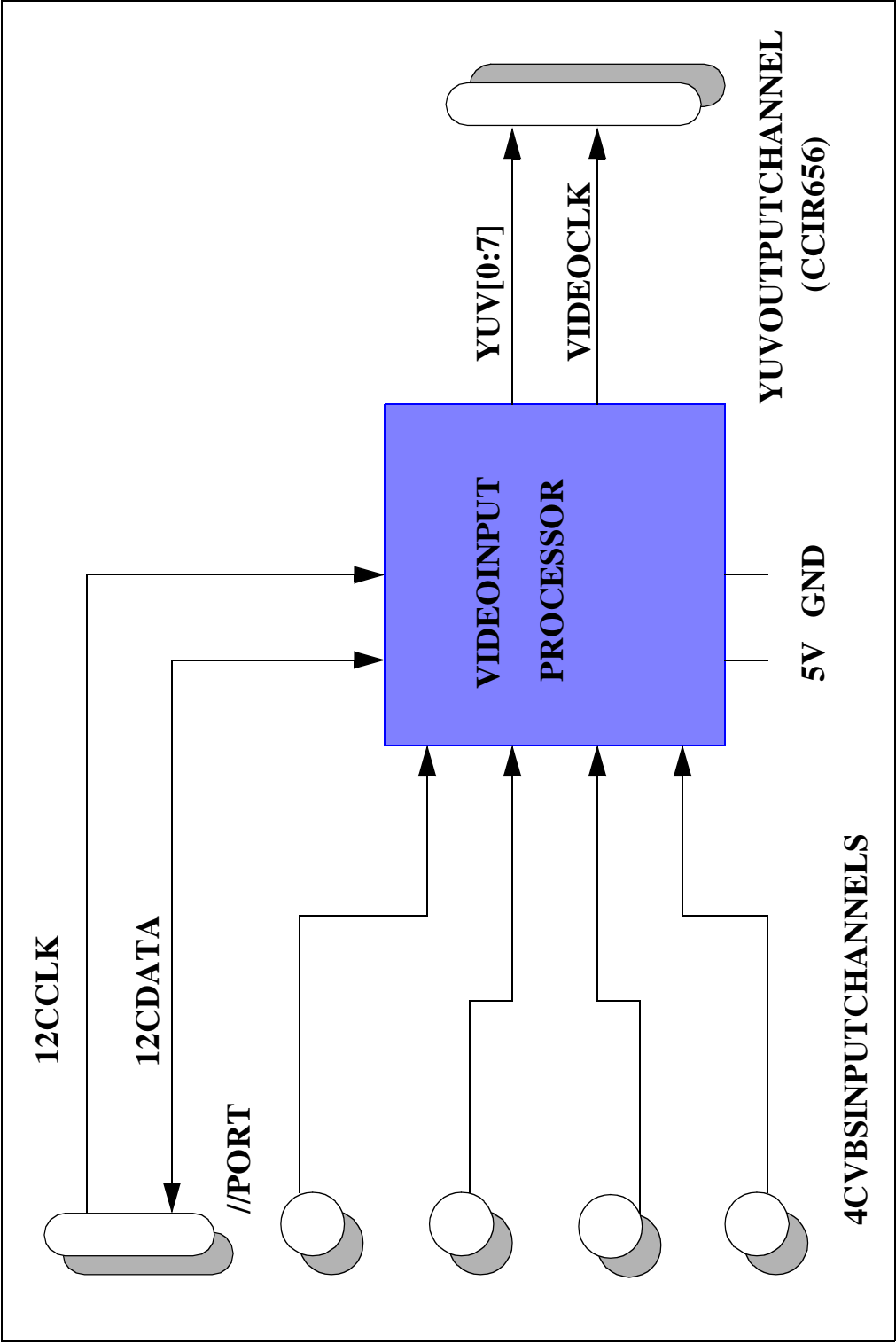
Dimensions:

- 168mm x 107mm x 4 layers PCB.

Mounting:

- ISA connector.

Table1.BlockDiagram



1.2 Videofeatures

The Video Input Processor of this board includes source selection, anti-aliasing filter and ADC, an automatic clamp and gain control, a clock generation Circuit, a digital multi-standart decoder (PAL BGHI, NTSC, NTSCm and SECAM), a brightness/contrast/saturation control circuit, a colour space matrix and a 27MHz VBI data by-pass.

This board accepts analog inputs CVBS from TV and VTR sources and is controlled by I₂C bus.

2. HardwareInstallation

2.1 Installation

WhenyouinstalltheVIPboard,youmustattachtheparallel,videoooutputandvideoinput cablesandsupplytheboardbypluggingitinISAslotsorbyconnectingittoexternalpower supply.

2.2 Connectorlist

Thefollowingtablecontainsstheexhaustivelistofalltheconnectorsatareimplemented ontheVIPboard.

Table2.ConnectorList

Identification	Type	NbofPins	Funtion
P1	DB25maleconnector	25	VideoOutput
P2	DB25femaleconnector	25	2Ccontrol
P2&P3	ISAconnector	96	Supplyboard
P5	Cinchfemale	2	VideoInput1
P6	Cinchfemale	2	VideoInput2
P7	Cinchfemale	2	VideoInput3
P8	Cinchfemale	2	VideoInput4
P9	StraightHeaderThin	10	Test
P10	StraightHeaderThin	10	Test

2.2.1 Connectordefinition

**Table3.P1VideoOutput
connector**

Signalname	Pin
GND	1
GND	2
GND	3
GND	9
GND	10

**Table3.P1VideoOutput
connector**

Signalname	Pin
GND	11
YUV[0]	14
YUV[1]	15
YUV[2]	16
YUV[3]	17
YUV[4]	18
YUV[5]	19
YUV[6]	20
YUV[7]	21
LLC	22
GND	26
GND	27

**Table4.P2I2Cbuscontrol
connector**

Signalname	Pin
I2CDataOut	6
I2CCLK	13
I2CDataIn	15
GND	26
GND	27

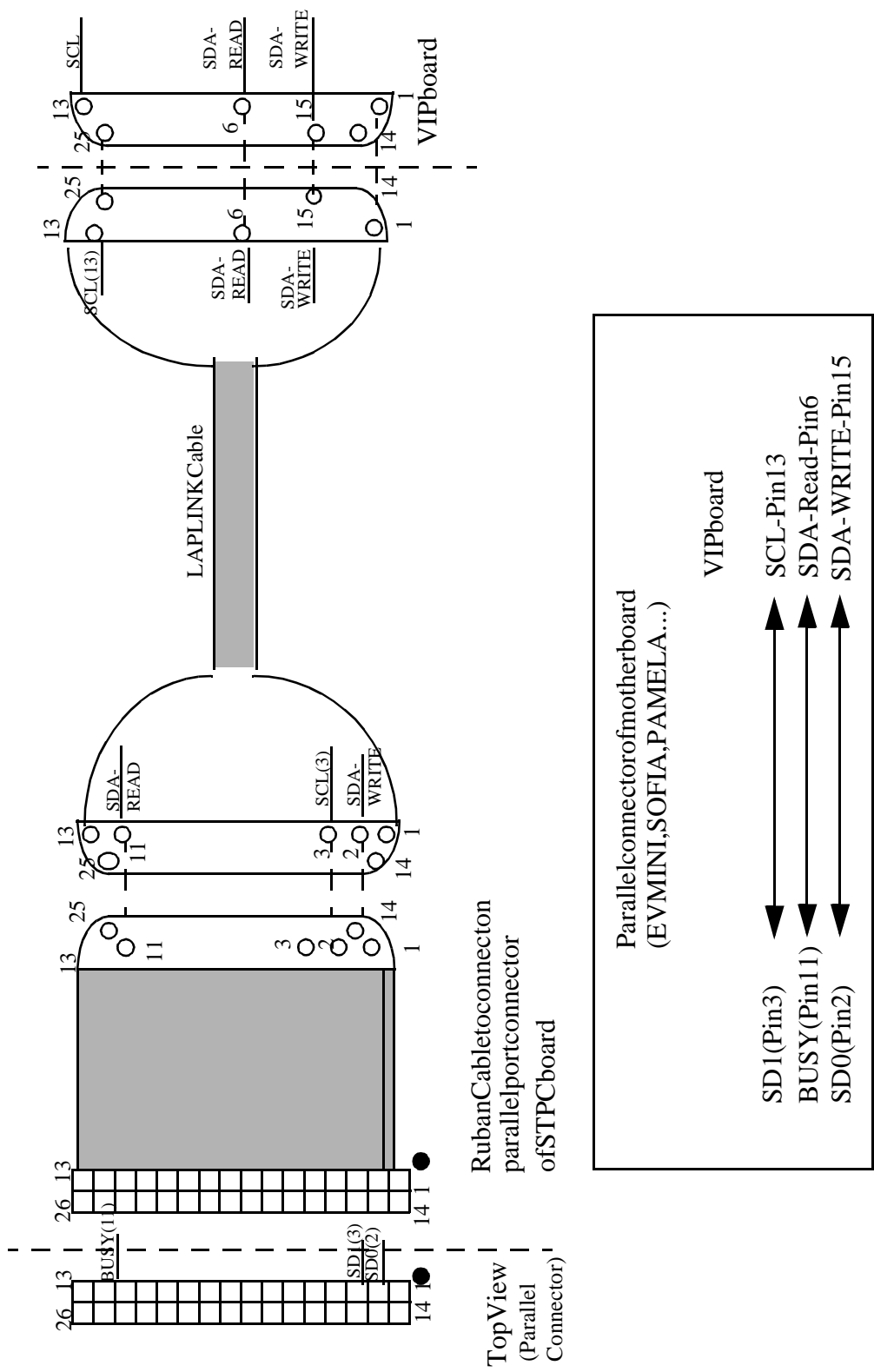
Table5.P9TestconnectorPinDefinition

Signalname	Pin	Pin	Signalnames
GND	2	1	AOUT
GND	4	3	VS
GND	6	5	HS
GND	8	7	RTS0
GND	10	9	RTS1

Table6.P10TestconnectorPinDefinition

Signalname	Pin	Pin	Signalnames
GND	2	1	GPSW
GND	4	3	RTC0
GND	6	5	LLC2
GND	8	7	LLC
GND	10	9	RES#

2.3 ParallelCable



3. Software Installation

The VIP kit includes one floppy disk

- Application program for VIP board (VIP.EXE).
- Setup program for VIP board (INITVIP.EXE).

3.1 Application program

- Start on a DOS session and read the floppy disk
- Type "VIPVIN[n][videoinput]x[n]y[n]w[n]h[n]l[n]r[n]" to run the application program. You can choose between this options:
 - VIN[n]: input channel (VIN1, VIN2, VIN3, VIN4).
 - [video input] : Define the video input format (PAL (by default), PALBGHI, NTSC, NTSCM, SECAM, NTSC_JAPAN, PAL_N, PAL_M, PAL_43
 - x,y: left, up corner of start video.
 - w: Width of video in screen must be bigger or equal than (width video)/2
 - h: Height of video in screen must be bigger or equal than (height video)/2
 - l: number of line in video source
 - r: width of video source
- Press "ENTER".
- After run, press "ESC" to quit application

WARNING:

- ***VIP.EXE doesn't work in Windows 95 DOS box.***
- ***VIP.EXE doesn't work with EMM386.exe. Then remove EMM386.exe line in the CONFIG.SYS file before use it.***
- ***when the TV Output is enabled in BIOS Setup, the application program works only in 640X480 graphic mode >***
- ***Else (TV output disabled in BIOS Setup) it works only in 800X600 graphic mode.***

Examples:

“vipVIN1”:Viewthevideochannelnumber1inPALmode.

“vipVIN2NTSCx50y50”:Viewthevideoatstartx=50,y=50inNTSCmode.

“vipVIN3NTSCw800h600”:Viewthevideoinfullscreenin800x600mode.

3.2 Setupprogram

- StartonaDOSsessionandreadthefloppydisk
- Type“INITVIPVIN[n][videoinput]”torunthesetupprogram.
Youcanchoosebetweenthisoptions:
 - VIN[n]:inputchannel(VIN1,VIN2,VIN3,VIN4).
 - [video input] : Define the video input format (PAL (by default),PALBGHI,NTSC,NTSCM,SECAM
- Press“ENTER”.

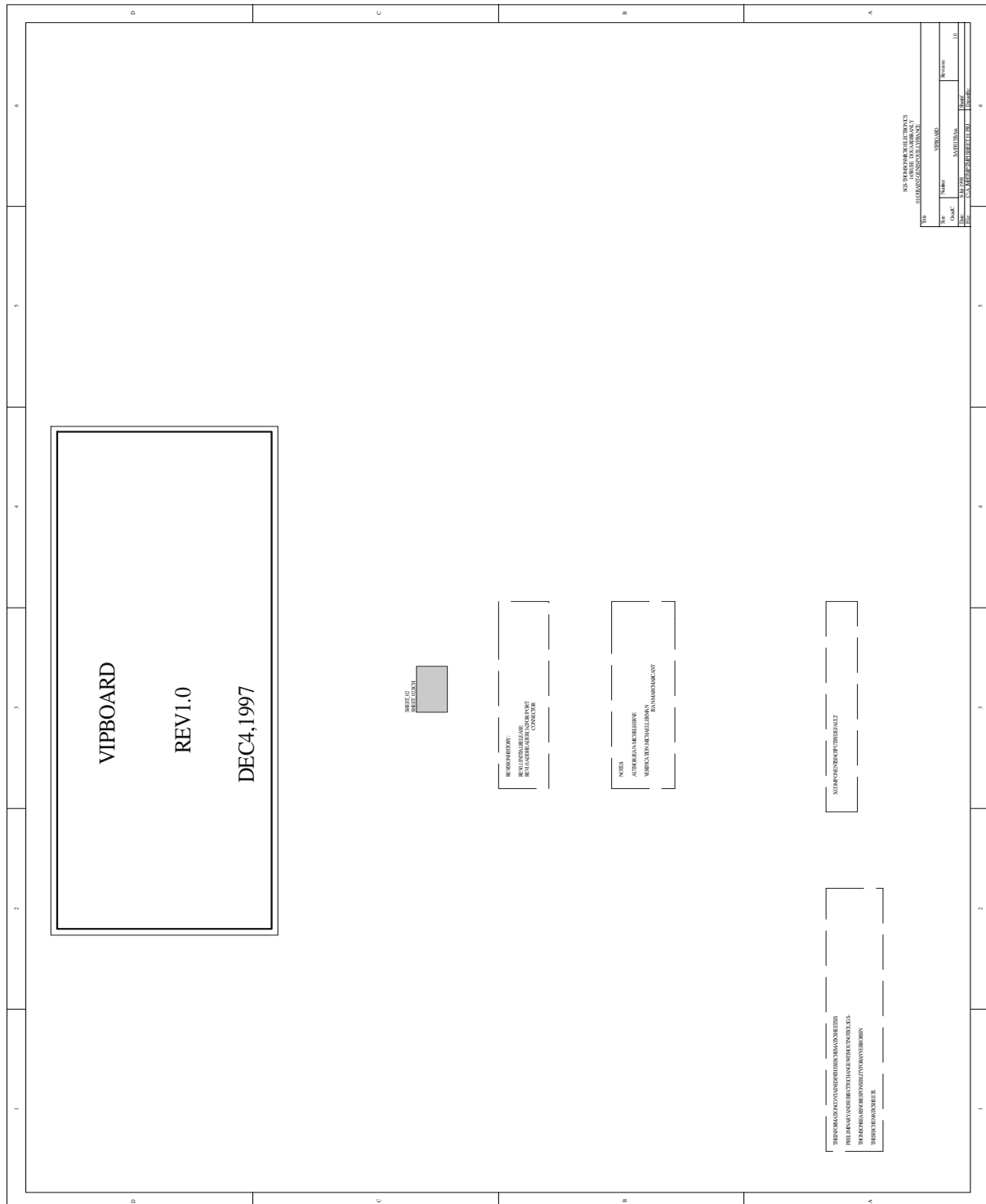
WARNING:

ThissoftwarecanworkwithEMM386.exeandinaWindows95DOSbox

WARNING:

***ThisprograminitializestheVIPboardonly!Sotoseetheviodeoinput,youmustyou
mustrunthesoftwareapplication.***

4.1 Schematics



4.2 Billofmaterials

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Bill Of Materials July 8, 1998 Page 1

Item	Quantity	Reference	Part
1	4	C205,C206,C207,C208	22nF
2	12	C209,C210,C211,C212,C213, C214,C215,C216,C220,C222, C224,C227	.1uF
3	2	C217,C219	22pF
4	1	C218	1nF
5	4	C221,C223,C225,C226	22uF
6	1	FB1	FBEAD
7	1	L13	10uH
8	2	P1,P2	CONNECTOR_DB25
9	1	P3	BUS36
10	1	P4	BUS62
11	4	P5,P6,P7,P8	CINCH_F
12	2	P9,P10	HEADER_5X2
13	1	P11	HEADER_13X2
14	4	R191,R193,R195,R197	47
15	4	R192,R194,R196,R198	27
16	2	R200,R202	1K
17	1	R201	10K
18	4	T1,T2,T3,T4	PIN
19	1	U43	SAA7111A_LQFP
20	1	U45	74F125
21	2	U46,U47	LF33
22	1	Y5	CRYSTAL 24.576MHz

Wiring errors

Header 13 X 2 is wrong connected:

- SDA WRITE must be connected to the pin 3 of P11
- SDA Read must be connected to the pin 5 of P11
- SCL must be connected to the pin 21 of P11

4.3 I2CAddress

TheaddressoftheVideoInputProcessorisfixedbyhardware(Pullanddown)to
-0X48h(SlaveAddressWrite)
-0X49h(SlaveAdressRead)

4.4 ApplicationNoteHistory

Release0.1:FirstRelease

Release1.0:Addresschipselectconnectedtotheground

5. DocumentHistory

Release1.0:July,10th,1998.FirstRelease